habitat was that seeds had been carried by cattle from Texas.

The mesquite tree, which reaches its maximum size along Rio Grande River in western Texas and northern Mexico, is quite abundant in southwestern Oklahoma, especially in the counties bordering Red River south of the Wichita Mountains, where it sometimes reaches the size of 10 inches in diameter and 20 feet in height. It occurs sparingly as far east as Coal and Atoka counties, Oklahoma, being found on the prairie between the eastern end of the Arbuckle and the western end of the Ouachita mountains. It also occurs in central Oklahoma as far north as southern McClain County. Both these locations are in the drainage of Washita River.

Queerly enough, mesquite is very rare, if indeed present at all, in the drainage of the two Canadian rivers in the western part of Oklahoma. But it is found in the valley of Cimarron River north of the Canadians in the northwestern part of the state. It is especially abundant in canyons and slopes of the Gypsum Hills and in the flat lands at the foot of these hills south of Cimarron River in Blaine, Major and Woodward counties, where thousands of acres are covered with dense growths of the shrub which here rarely becomes more than eight feet in height. So far as observed, it does not here occur among the sand hills.

Mr. R. C. Tate, a local naturalist of Kenton, Oklahoma, has reported numerous specimens of mesquite shrubs along Cimarron River and its tributaries in northwestern Cimarron County, which is the westernmost of the three counties which make up the Panhandle of Oklahoma, originally known as No Man's Land or the Neutral Strip.[1]

For some years Mr. Tate has been searching for the mesquite in southern Colorado, and under date of November 17, 1932, writes me that he has finally located a specimen about a quarter of a mile north of the Colorado line, in section 15, Township 35 South, Range 49 West. This is in Baca County, 49 miles west of the southeast corner of Colorado and in latitude 37° north.

Tate also reports clumps of mesquite along Carrizo Creek in northeastern New Mexico. The location is section 15, Township 30 North, Range 35 East, about 12 miles west of the Oklahoma line, and about the same distance south of the Colorado line.

It is altogether possible that the plant may occur along the Big Bend of the Cimarron River in Morton, Stevens, Grant or Seward Counties in southwestern Kansas. If in Grant County, the locality may be farther north than the lone shrub which Dr. Ward and I found near Belvidere, southern Kiowa County, 34 years ago.

It would appear that the greater number of observers are inclined to agree with Ward that the seeds of mesquite have been carried northward by cattle. However, it might not be amiss at this time to place on record an observation by the late Colonel Charles Goodnight, famous plainsman and rancher, one of the first men to successfully raise buffalo in captivity. In his opinion the seeds were carried by wild horses or mustangs, rather than by cattle or buffalo. Colonel Goodnight, who was an unusually close observer, is reported to have said that he had frequently noted small mesquite shrubs spring up near piles of horse manure at points far distant from the natural habitat of the plant.

However, the most vexing problem is, why is the mesquite so rare, if not entirely absent, in the valley of both North and South Canadian rivers in western Oklahoma, and so abundant along the tributaries of Cimarron River still farther north? Plant ecologists please answer.

CHAS. N. GOULD
UNIVERSITY OF OKLAHOMA

SPECIAL CORRESPONDENCE

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA

IN a review of the 1932 activities of the Academy of Natural Sciences of Philadelphia recently issued, Charles M. B. Cadwalader, managing director, depicts its 121st year as one of marked advances, and calls special attention to new exhibits, a large increase in museum attendance and continued scientific exploration in many parts of our own and other lands.

"We have shared the common decrease in income and contributions," says Mr. Cadwalader, "but have not lessened our efforts to give Philadelphia a free natural history museum of the first order, and to continue the laboratory research that has made the academy world known. During the year we kept the museum open every day, without any change in hours, and we had 113,300 visitors, a 9 per cent. increase over 103,700 in 1931, and nearly three times as many as in 1930. Among these were 2,900 in special classes from Philadelphia schools; 2,200 from private and public schools in New Jersey, Delaware and the metropolitan area, 1,000 Boy Scouts, who entered their names in the register provided for them, and 600

[1] "Some Observations on the Spread of Mesquite to the North in Cimarron County, Oklahoma," *Proceedings* of the Oklahoma Academy of Science, Vol. VIII, 1928, p. 58.

pupils from the School of Industrial Art in the regular Saturday sketching classes.

"Two new animal life-groups, with backgrounds painted by C. Clark Rosenkranz, were opened—one of musk-oxen from East Greenland, the expedition and group a gift from R. R. M. Carpenter, a trustee of the academy; and one of swans from Currituck County, North Carolina, presented by Mrs. Charles W. Henry. We now have eight of these striking exhibits in North American and African Halls, and five additional ones are in course of construction. These include the remarkable giant sable antelope from Angola, West Africa, gift of Prentiss N. Gray, a trustee of the academy; also the rare giant panda from Szechuan Province, China, and the takin, a strange cattle-like mountain antelope from western China, both presented by Brooke Dolan, whose expedition collected the specimens. Two others, now partially completed, await further financing—a waterhole group of fifteen East African animals, which will be the largest in the museum, and a group of American bison, with four unusually fine specimens presented by General Harry C. Trexler, a trustee of the academy.

Additional birds needed for the half-completed display of those found in and near Philadelphia have been secured. This exhibit, which is so popular with school children, teachers and nature lovers, can be finished as soon as funds are provided.

In Mineral Hall was installed the first of a series of instructive exhibits, this one answering the question, "What is Geology?" Other additions include modern cases given by Effingham B. Morris, for effective showing of spectacular minerals; a large "ringing rock" from Bucks County, Pennsylvania; a section of the Kilbourn meteorite, and a clear crystal ball cut from a mass of quartz found in Logan, Philadelphia.

The seventeen expeditions sponsored by the academy included several of outstanding importance. Brooke Dolan, who headed an expedition to western China and Tibet, returned after eighteen months' absence with 200 mammals, 900 birds and numerous mollusks, many of them rare and nearly all new to the academy's collections, the largest and most valuable representation ever received from that part of the world.

M. A. Carriker, Jr., accompanied by H. Radclyffe Roberts, continued his bird survey of Peru, returning from his fourth expedition with 2,000 specimens. Dr. Witmer Stone says: "The importance of this work consists not only in making an inclusive collection of Peruvian birds and discovering new varieties in regions hitherto unexplored by naturalists, but also in securing data on distribution to aid in determining places of origin of the various types. It will shed further light on the development of the Andes Mountains, for our knowledge of the earth's past history is derived quite as much from such sources as from geology."

Other expeditions were as follows: Mr. and Mrs. Rodolphe M. de Schauensee to Siam, and Mr. and Mrs. Sidney J. Legendre to Indo-China, both for birds and mammals; W. Judson Coxey, a fifth expedition to Ecuador for butterflies and moths; Mrs. J. Norman Henry and Miss Josephine deN. Henry to British Columbia for plants, minerals and insects; Miss Mary G. Henry to the famous Meteorite Crater in Arizona; Edgar B. Howard to New Mexico for fossil remains; Wharton Huber to New Mexico for birds and mammals; James Bond, a sixth expedition to the West Indies for birds; Samuel G. Gordon to Canada for minerals; Arthur N. Leeds to Florida for ferns; Bayard Long and Dr. Walter M. Benner to the Carolinas and Georgia for plants, and Dr. and Mrs. Francis Harper to the Okefinokee Swamp in Georgia for plants.

More than 65,000 specimens of mammals, birds, mollusks, insects, moths, butterflies, fishes, reptiles, minerals and plants were added to the laboratory collections, which now total more than 7,000,000 specimens.

Using Cape May, New Jersey, as a base for continued study of bird migration, Dr. Witmer Stone, curator of vertebrate zoology, found an explanation of the curious northward flight of certain birds on their southward autumnal journey. His observations indicate that strong northwest winds at that season cause the birds to fly into the wind to prevent being blown out to sea. When they find feeding grounds, they delay their passage over the wide Delaware Bay until the winds abate.

Henry W. Fowler, curator of fishes and reptiles, completed the sixth and seventh volumes of his monumental work on "The Fishes of the Philippine Seas and Adjacent Waters."

Dr. Henry A. Pilsbry, curator of mollusks, discovered that the Florida pond snails do not serve as temporary hosts to the human blood fluke which causes Schistosomiasis, a serious malady spreading throughout the tropics. Comparing specimens secured by the recent expedition to the Everglades with those from Puerto Rico and the Caribbees, he found that they do not belong to the same genus, as was previously believed.

Mr. Cadwalader calls attention to the inadequacy of funds for maintenance and staff in the academy's library, which now contains 120,000 volumes. He also

emphasizes the valuable services rendered during the year by the following voluntary workers: Miss Margaret N. Robins, Miss Mary Allison Reed, Miss Virginia C. Beggs, Mrs. Emmett R. Dunn, Jean Piatt, Miss Betty Shryock, Mark H. C. Spiers, Joseph Wood, Jr., Miss Anne Harbison, Ernest L. Bell, Cyrus H. Chappell, Walter S. Cosgrove, J. W. R. Rehn, Russell M. Wood, Don M. Benedict, William R. Keeney, Mrs. Francis Harper, Edward R. Barnsley, Miss Anne Wistar Comfort, Horace J. Hallowell, Miss Josephine deN. Henry, Miss Mary G. Henry and George Vaux.

A total of 4,500 members and visitors attended the meetings of the seven natural history organizations associated with the academy—the Delaware Valley Ornithological Club, the Philadelphia Mineralogical Society, the Philadelphia Botanical Club, the Leidy Microscopical Club, the American Entomological Society, the Pennsylvania Fish Culturists' Association, and the Pennsylvania State Fish and Game Protective Association.

Fenimore Johnson was elected a member of the board of trustees.

REPORTS

MEDALS PRESENTED AT THE ANNUAL DINNER OF THE NATIONAL ACADEMY OF SCIENCES

THERE has been printed in SCIENCE the names of those to whom the medals of the National Academy of Sciences were presented at the Washington meeting. The following statement gives some information concerning the medallists and concerning previous awards of the medals.

Alexander Agassiz Medal for Oceanography: Awarded to Albert Defant, of the Institut für Meereskunde, Berlin, Germany, for his studies on atmospheric and oceanic circulation and his notable contributions to theoretical oceanography. This medal is provided through the Murray Fund, a gift from the late Sir John Murray to found the Alexander Agassiz gold medal for the awarding of medals to scientific men in any part of the world, for original contributions to the science of oceanography. Ten previous awards have been made, as follows: Johan Hjort, 1913; Albert I, Prince of Monaco, 1918; C. D. Sigsbee, 1920; Otto Sven Pettersson, 1924; Vilhelm Bjerkness, 1926; Max Weber, 1927; Vagn Walfrid Ekman, 1928; J. Stanley Gardiner, 1929; Johannes Schmidt, 1930; Henry Bryant Bigelow, 1931.

Public Welfare Medal: For eminence in the application of science to the public welfare—awarded to William Hallock Park, of New York City, for his work as head of the research laboratories of the New York City Department of Health as a pioneer and leader both in research and in the application of scientific discovery to the prevention of disease. This medal is provided for from the Marcellus Hartley Fund, established in 1913–14 through the gift of Mrs. Helen Hartley Jenkins, in memory of her father, Marcellus Hartley. Ten previous awards have been made, as follows: G. W. Goethals, 1914; W. C. Gorgas, 1914; Cleveland Abbe, 1916; Gifford Pinchot, 1916; S. W. Stratton, 1917; Herbert Hoover, 1920; C. W. Stiles, 1921; Charles V. Chapin, 1928; Stephen Tyng Mather, 1930; Wickliffe Rose, 1931.

John J. Carty Medal and Award for the Advancement of Science: Awarded to John Joseph Carty, a member of the academy, since deceased, in whose honor the medal was established for his distinguished accomplishments in the field of electrical engineering, particularly as they have influenced the development of electrical communication, and also his noteworthy influence on the introduction of fundamental science and of the methods of sound scientific research as an integral and powerful tool of industrial development. This is the first award of the Carty Medal, which was established by the American Telephone and Telegraph Company in November, 1930, in recognition of Mr. Carty's noteworthy contributions to science and as a testimonial of the esteem in which he is held by his associates in the Bell System. The terms of the gift provide that the awards shall be made to an individual, for noteworthy and distinguished accomplishment in any field of science coming within the scope of the National Academy of Sciences; either for specific accomplishment in some field of science, or for general service in the advancement of fundamental and applied science.

Henry Draper Medal: Awarded to V. M. Slipher, Lowell Observatory, Flagstaff, Arizona (a member of the academy), in recognition of his spectroscopic researches, among the most important of which may be mentioned: (1) The discovery of "stationary" calcium lines in stellar spectra; (2) the development of efficient methods of observations of the spectra of spiral nebulae and the securing of the first observations of their radial velocities; (3) observations of bright lines and bands in the spectra of the night sky. This medal is made possible through the Henry Draper Fund, established by gift of Mrs. Henry Draper in 1883, in memory of her husband, a deceased member of the academy. Twenty-one previous awards of this medal have been made, as follows: S. P. Langley, 1886; E. C. Pickering, 1888; H. A. Rowland, 1890; H. K. Vogel, 1893; J. E. Keeler, 1899; Sir William Huggins, 1901; George E. Hale, 1904; W. W. Campbell, 1906; C. G. Abbot, 1910; H. Deslandres, 1913; Joel Stebbins, 1915; A. A. Michelson, 1916; W. S. Adams, 1918; Charles Fabry, 1919; Alfred Fowler, 1920; Pieter Zeeman, 1921; H. N. Russell, 1922; A. S. Eddington, 1924; Harlow Shapley, 1926; William Hammond Wright, 1928, and Annie Jump Cannon, 1931.